REMARKS

Claims 25 through 36 are active in the application.

The paragraph numbers of the Office Action are used herein.

3. The objection to the drawings is noted. This will be corrected in due course.

4.&5. Claims 31 and 35 are rejected as containing subject matter not originally disclosed in the application. Claim 31 has been replaced by claim 41 and claim 35 by claim 43. The new claims have been written to overcome this rejection. It is also submitted that the subject matter objected to is supported in the application. That is, each raster element occupies the plane, i.e., raster elements are presented on the image plane, and one raster element comprises many pixels (see page 23, lines 16-25 of the Specification).

6.&7. Claims 28 and 29 are rejected under §112 for use of the phrase "parallel sharing raster means". Claim 28 has been replaced by claim 39, which does not use this phrase. Claim 29 depends from claim 39. Therefore, this objection is overcome.

8.&9. Claims 25, 26, 28-31 and 34-36 are rejected as being anticipated by Furness, III, et al., U.S. 5,467,104. Claim 25 has been replaced by claim 38, claim 26 depends from claim 38, claim 28 has been replaced by claim 39, claim 29 depends from claim 39, claim 30 has been replaced by claim 40, and claim 41 replaces claim 31. Claims 42-43 replace claims 34-35.

Furness is directed to a deflector based device. Furness lacks various elements and differs in the following manner from the present invention (PI = present invention below):

(a) Furness has no display plane. The image is formed directly on the retina (column 2, lines 33-45a). PI has a display plane.

(b) raster generator (200) is raster modulator (200). PI uses separate steps of raster generation and modulation, performed on different blocks that eventually form the final image.

(c) (200) is "a linear array of 100 pixels" (column 9, lines 25-45). PI has a complimentary screen and a two dimensional array of pixels.

(d) to form a "visual field of 2000*2000 pixels' on (200), image fragments "are scanned in a first and second perpendicular direction" (column 4, lines 30-35). So a result of Furness' deflector based method - constituent fragments are formed successively, one after one. In the PI, blocks are basically formed in parallel.

(e) no independent modulation of separated beams. PI uses independent modulation of light corresponding to different pixels.

One or more of the above features present in the new claims and original claims are not found in the reference. Therefore, the §102 rejection over Furness is not valid. The claims define novel and advantageous subject matter and should be allowed.

10. Claims 25 (replaced by claim 40) and 37 are rejected as anticipated

by Pu, et al., U.S. 5,483,365. Pu is directed to a device for holographic storage. In the device of Pu, a laser beam is split into R and S beams, the S beam is directed on a hologram recording medium (40), and SLM (50) modulates the S beam in accordance with image to be recorded. The S and R beams produce an interference pattern on (4) column 2, lines 63-67. Pu:

(a) uses two beams, R and S, to produce hologram. Pu performs "angular multiplexing . . . by applying succession of input images to (50) while rotating (40) through succession of angles, while S and L beams continue to illuminate the same recording spot". column 3, lines 16-25. PI uses only one beam, produced by the complimentary screen.

(b) holograms recorded over one another on (40). In the PI, a matrix image is composed of blocks that are assembled to form the image on the image plane.

(c) hologram formed by rotation of (40). The PI does not use rotation of a device.

(d) holograms formed one after one, in succession of images on (50). In PI, blocks are formed in parallel (at the same time).

(e) element (5) is used to form an image and there is no complimentary screen from which the raster elements are formed. In the PI, a complimentary screen is present.

(f) no beam separation of one pixel beam to simultaneously form many

pixels. PI uses beam separation.

(g) no independent modulation of separated beams - "to read recorded hologram use R beam to produce O beam incident on plane (60)". column 3, lines 1-15. PI uses independent modulation of separate beams.

(h) recorded holograms are visualized on the same plane (60), one after one, as cinema frames. In the PI, blocks are assembled into a matrix viewed together.

(i) Pu uses combined blocks for pixel forming (50) and modulation (50). PI uses separated blocks.

(j) visualized image is two dimensional (2D) image, identical to that produced on (50) (not holographic). Claims of the PI are directed to visualizing a synthesized 3D holographic image.

(k) recording information on a plane. PI records information in the form of electric signals.

Accordingly, the claims patentably distinguish over the Pu reference and should be allowable.

11. Claims 25 (now 38), 26 and 30 (now 40) are rejected as anticipated by Thompson, et al., U.S. 5,506,597. This patent is directed to a matrix light valve device. Thompson has:

(a) a display (320) whose resolution does not exceed SLM (316) resolution, "each pixel corresponding to one cell" (column 10, lines 65-67; page 11, Lines 1-2). There is no increase in resolution. In the PI, the display plane resolution M

(pixels) exceeds complimentary screen resolution N (pixels).

(b) light directed along path (318) with (326) is located along (318). A system (326) "enlarges the light in X direction (330)" and "enlarges the light in Y direction", to thus "break the beam into smaller beams" (column 14, lines 23-56). This breaking is made after modulation. In the PI, the light beam separation precedes modulation.

(c) the smaller beams formed from one cell are uniformly modulated to form one cell corresponding pixel. One smaller beam does not correspond to an individual pixel. For this reason the display (320) surface serves "to blur the beams together as to form a larger pixel" (column 14, lines 65-66). Thus, there is no pixel separation or multiplication into many pixels. In the PI, the pixel is separated into beam components forming different pixels placed in P different blocks/.

(d) no individual modulation for separated beams. In PI, each of the separated pixels corresponds to light modulated apart from each other.

(e) raster generator (316) is a raster modulator (316). In the PI, the raster generating and modulating are different elements.

(f) SLM (316) used to modulate structureless light source (column 6, lines 36-39). PI has a modulator array used to modulate an array of raster elements, corresponding to different pixels.

Here also, the claims rejected over Thompson patentably distinguish over this reference and should be allowed.

Claims 44-47 have been added. These are dependent claims and also should be allowable.

The other art cited has been considered and is not deemed pertinent.

Prompt and favorable action is requested.

Respectfully submitted,

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MARK-UP FOR AMENDMENT OF MARCH 21, 2001
PURSUANT TO 37 C.F.R. §1.121

26.   (Amended) A system as in claim [25] 38 wherein said raster multiplying system comprises an array of coordinated light dividing elements to divide and direct received light on said image display plane.

27. (Amended) A system as in claim [25] 38 further comprising a holograph generator for producing a three dimensional holographic image on said display plane.

29.   (Amended) A system as in claim [28] 39 further comprising means for optic compression of generated raster elements for increasing the dot per inch resolution of scanning light beams.

32.   (Twice Amended) A method as in claim [30] 40 wherein the step of forming said plurality of [fragments] blocks of an image to be displayed comprises forming fragments of a hologram, and further comprising generating said hologram as a three dimensional holographic image on said image display plane.

33.   (Amended) A method for image forming as in claim [30] 40 used for producing hard copy of an electronically formed holographic image, further comprising:

generating the holographic image;

projecting the formed image on a photosensitive material;

forming a hologram on the photosensitive material; and

developing the photosensitive material.

36.   (Twice Amended) A method as in claim [34] 41 wherein generated raster elements are subject to additional optical compression for increasing dot per inch resolution of sensitive plane scanning beam.

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